

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE MINNESOTA DEPARTMENT OF LABOR AND INDUSTRY

In the Matter of the Proposed
Amendments to Rules Governing the
Adoption of the 2006 International
Residential Code, Minnesota Rules,
Chapter 1309, and Repeal of Rule Parts
1309.0312, 1309.0315, 1309.1316,
1309.0322, 1309.0506, and 1309.0703,
Subparts 1, 2, 4, 5, 6, 7, and 8.

**REPORT OF THE
ADMINISTRATIVE LAW JUDGE**

A hearing concerning the above rules was held by Administrative Law Judge Richard C. Luis at 9:00 a.m. on January 26, 2007, in the Offices of the Department of Labor and Industry, 443 Lafayette Road North, St. Paul, Minnesota.

That hearing and this Report are part of a rulemaking process that must occur under the Minnesota Administrative Procedure Act before an agency can adopt rules.¹ The legislature has designed that process to ensure that state agencies—here, the Minnesota Department of Labor and Industry—have met all the requirements that Minnesota law specifies for adopting rules. Those requirements include assurances that the proposed rules are necessary and reasonable and that any modifications that the Agency may have made after the proposed rules were initially published do not result in the rules being substantially different from what the Agency originally proposed. The rulemaking process also includes a hearing to allow the Agency and the Administrative Law Judge reviewing the proposed rules to hear public comment about them.

Patricia Munkel-Olson, Assistant Attorney General, 445 Minnesota Street, Suite 1400, St. Paul, Minnesota 55101-2131, appeared at the rule hearing on behalf of the Minnesota Department of Labor and Industry (“the Department” or “DOLI”). The members of the Department’s hearing panel were Stephen Hernick, Assistant Director, Donald J. Sivigny, Senior Code and Rules Development Representative, and Richard Lockrem, Chair of the Advisory Committee.

Approximately 40 people attended the hearing; 24 people signed the hearing register. The hearing continued until all interested persons, groups or associations had an opportunity to be heard concerning the proposed

¹ Minn. Stat. §§ 14.131 through 14.20.

amendments to these rules.

After the hearing ended, the Administrative Law Judge kept the administrative record open for another twenty calendar days--that is, until February 15, 2007--to allow interested persons and the Board to submit written comments. Following the initial comment period, Minnesota law² required that the hearing record remain open for another five business days to allow interested parties and the Board to respond to any written comments. The hearing record closed for all purposes on February 23, 2007.

NOTICE

The Department must make this Report available for review by anyone who wishes to review it for at least five working days before the Department takes any further action to adopt final rules or to modify or withdraw the proposed rules. If the Department makes changes in the rules other than those recommended in this report, it must submit the rules, along with the complete hearing record, to the Chief Administrative Law Judge for a review of those changes before it may adopt the rules in final form.

Based upon all the testimony, exhibits, and written comments, the Administrative Law Judge makes the following:

FINDINGS OF FACT

Nature of the Proposed Rules

1. This rulemaking proceeding involves a proposal by the Department to amend and add additional language to rule provisions currently set forth in Minnesota Rules Chapter 1309 relating to the residential building code. The amendments would adopt the 2006 edition of the International Residential Code ("IRC") with amendments.

2. The Department was assigned responsibility for the state building codes in 2005. The Department of Administration Reorganization Order Number 193, dated April 4, 2005, provides: "The responsibilities of the Department of Administration in relation to state building codes and standards as set forth in Minnesota Statutes 16B.59 through 16B.76, 2004, were transferred to the Department of Labor and Industry."³ The Department's Building Codes Standards and Licensing Division (Division) administers the building codes.⁴

3. Advisory Committees considered the IRC and provided advice to

² Minn. Stat. § 14.15, subd. 1.

³ Reorganization Order No. 193 was effective upon filing with the Secretary of State on May 16, 2005.

⁴ Tr. 22-25.

the Department. The IRC Committee, which consists of fourteen members and six alternates, meets under the auspices of the Department's Building Codes Standards and Licensing Division.⁵ The Committee members include representatives from builders, building officials, the concrete masonry industry, lath and plaster organizations, the League of Minnesota Cities and the previous Committee chair.⁶ The Committee met twenty-one times from November 21, 2003, to November 29, 2005, to review the 2003 edition of the IRC and proposed amendments to Minnesota Rule 1309. A total of 138 proposals were submitted to the Committee or the Division. The Department directed the IRC Committee to review the 2006 edition of the IRC instead of the 2003 edition. The Structural Advisory Committee, consisting of thirteen members and two alternates, reviewed the IRC. The Committee met eleven times between October 30, 2003, and April 18, 2006, to review the 2003 and 2006 editions of the IRC.⁷

4. A formal Request for Comments on the proposed rules was published in the State Register on August 9, 2004, and again on March 27, 2006.⁸ On December 6, 2006, the Department notified all persons and associations on the Department rulemaking list of the proposed amendments to rules governing the adoption of the IRC.⁹ The Department also provided notice by mail or e-mail to the Metropolitan Council; the League of Minnesota Cities; the Builders Association of Minnesota; the Builders Association of the Twin Cities; the Minnesota Masonry & Plaster Association; the American Council of Engineering Companies of Minnesota; the American Society of Civil Engineers, Minnesota Section; the International Masonry Institute; the Minnesota Concrete Masonry Association; the Minnesota Concrete Foundation Association; and all municipal code officials and others involved in code administration.¹⁰ A Dual Notice was published in the State Register on December 11, 2006. A draft copy of the proposed rule changes was published on the Department's website on December 11, 2006.

Rulemaking Legal Standards

5. Under Minn. Stat. § 14.14, subd. 2, and Minn. Rule part 1400.2100, one of the determinations which must be made in a rulemaking proceeding is whether the agency has established the need for and reasonableness of the proposed rule by an affirmative presentation of facts. In support of a rule, the agency may rely on legislative facts, namely general facts concerning questions of law, policy and discretion, or the agency may simply rely on interpretation of a statute, or stated policy preferences.¹¹ The Department prepared a Statement of

⁵ Testimony of Richard Lockrem, Tr. 26.

⁶ Test. of R. Lockrem, Tr. 26.

⁷ Test. of R. Lockrem, Tr. 26.

⁸ Ex. A.

⁹ Ex. G.

¹⁰ Ex. H.

¹¹ *Mammenga v. Board of Human Services*, 442 N.W.2d 786 (Minn. 1989); *Manufactured Housing Institute v. Pettersen*, 347 N.W.2d 238, 244 (Minn. 1984).

Need and Reasonableness ("SONAR") in support of the proposed rules. At the hearing, DOLI primarily relied upon the SONAR as its affirmative presentation of need and reasonableness for the proposed amendments. The SONAR was supplemented by comments made by DOLI's Panel and supporting witnesses during the public hearing.

6. Under Minnesota law, one of the determinations that must be made in a rulemaking proceeding is whether the agency has established the need for and reasonableness of the proposed rules by an affirmative presentation of facts.¹² When an agency reasonably interprets a statute, it is the role of the legislature or the Supreme Court, and not the role of an Administrative Law Judge, to overrule that interpretation.¹³

7. The question of whether a rule has been shown to be reasonable focuses on whether it has been shown to have a rational basis, or whether it is arbitrary, based upon the rulemaking record.¹⁴ Arbitrary or unreasonable agency action is action without consideration and in disregard of the facts and circumstances of the case.¹⁵ A rule is generally found to be reasonable if it is rationally related to the end sought to be achieved by the governing statute.¹⁶ The Minnesota Supreme Court has further defined an agency's burden in adopting rules by requiring it to "explain on what evidence it is relying and how the evidence connects rationally with the agency's choice of action to be taken."¹⁷

8. Reasonable minds might be divided about the wisdom of a certain course of action. An agency is legally entitled to make choices between possible approaches so long as its choice is rational.¹⁸ It is not the role of the Administrative Law Judge to determine which policy alternative presents the "best" approach, since this would invade the policy-making discretion of the agency. The question is, rather, whether the choice made by the agency is one that a rational person could have made.¹⁹

9. In addition to need and reasonableness, the Administrative Law Judge must also assess whether DOLI complied with the rule adoption procedure, whether the rule grants undue discretion, whether the Department

¹² Minn. Stat. § 14.14, subd. 2; Minn. R. 1400.2100.

¹³ *In re Northern State Power Co.*, 604 N.W.2d 386, 390 (Minn. App. 2000).

¹⁴ *Minnesota Chamber of Commerce v. Minnesota Pollution Control Agency*, 469 N.W.2d 100, 103 (Minn. Ct. App. 1991); *Manufactured Housing Institute v. Pettersen*, 347 N.W.2d 238, 240 (Minn. 1984).

¹⁵ *St. Paul Area Chamber of Commerce v. Minn. Pub. Serv. Comm'n* 312 Minn. 250, 260-61, 251 N.W.2d 350, 357-58 (1977).

¹⁶ *Mammenga*, 442 N.W.2d at 789-90; *Broen Mem'l Home v. Minnesota Dept. of Human Services*, 364 N.W.2d 436, 444 (Minn. Ct. App. 1985).

¹⁷ *Manufactured Hous. Inst. v. Pettersen*, 347 N.W.2d at 244.

¹⁸ *Peterson v. Minn. Dep't of Labor & Indus.*, 591 N.W.2d 76, 78 (Minn. Ct. App. 1999).

¹⁹ *Minnesota Chamber of Commerce v. Minnesota Pollution Control Agency*, 469 N.W.2d 100, 103 (Minn. Ct. App. 1991).

has statutory authority to adopt the rule, whether the rule is unconstitutional or illegal, whether the rule constitutes an undue delegation of authority to another entity, or whether the proposed language is not a rule.²⁰

10. Because DOLI suggested changes to Chapter 1309 of the proposed rules after original publication of the rule language in the State Register, it is also necessary for the Administrative Law Judge to determine if the new language is substantially different from that which was originally proposed.²¹ The standards to determine if the new language is substantially different are found in Minn. Stat. § 14.05, subd. 2. The statute specifies that a modification does not make a proposed rule substantially different if “the differences are within the scope of the matter announced . . . in the notice of hearing and are in character with the issues raised in that notice,” the differences “are a logical outgrowth of the contents of the . . . notice of hearing and the comments submitted in response to the notice,” and the notice of hearing “provided fair warning that the outcome of that rulemaking proceeding could be the rule in question.” In reaching a determination regarding whether modifications are substantially different, the Administrative Law Judge is to consider whether “persons who will be affected by the rule should have understood that the rulemaking proceeding . . . could affect their interests,” whether “the subject matter of the rule or issues determined by the rule are different from the subject matter or issues contained in the . . . notice of hearing,” and whether “the effects of the rule differ from the effects of the proposed rule contained in the . . . notice of hearing.”²²

Compliance with Procedural Rulemaking Requirements

11. On August 9, 2005, and March 27, 2006, DOLI published Requests for Comments in the State Register pertaining to the proposed rules.²³

12. The Department requested that the Chief Administrative Law Judge permit DOLI to omit the text of the proposed rule from publication of the Notice of Hearing in the State Register pursuant to Minn. Stat. § 14.14, subd. 1a(b). The Chief Administrative Law Judge approved the Department’s request on August 15, 2006.²⁴

13. On October 26, 2006, DOLI provided the Department of Finance with copies of the proposed rule, the Revisor’s draft of the proposed rule, and the draft SONAR.²⁵ On November 13, 2006, the Department of Finance notified the DOLI that the proposed changes would not impose a significant cost on local

²⁰ Minn. R. 1400.2100.

²¹ See Minn. Stat. §§ 14.15, subd. 3, and 14.05, subd. 2.

²² Minn. Stat. § 14.05, subd. 2.

²³ Ex. A.

²⁴ Ex. J.

²⁵ Ex. K. 3.

governments.²⁶

14. The Department requested the Office of Administrative Hearings to schedule a hearing for January 26, 2007 regarding the proposed rules and requested approval of the Additional Notice Plan on November 17, 2006. The DOLI filed the following documents with the Chief Administrative Law Judge at that time: a copy of the Dual Notice of Hearing proposed to be issued; a copy of the proposed rules as certified by the Revisor of Statutes; and a draft of the SONAR.

15. On November 22, 2006, the Department's Dual Notice of Hearing and Additional Notice Plan were approved by the Administrative Law Judge.²⁷

16. On December 6, 2006, the Department mailed a copy of the SONAR to the Legislative Reference Library as required by law,²⁸ and mailed copies of the Notice of Hearing, proposed rules, and SONAR to the chairs and ranking minority members of the House Jobs and Economic Opportunity Policy and Finance Committee, the House Commerce and Financial Institutions Committee, the Senate Environment, Agriculture and Economic Development Budget Division Committee, and the Senate Jobs, Energy & Community Development Committee.²⁹

17. On December 11, 2006, a copy of the proposed rules and the Notice of Hearing were published in the State Register at 31 State Reg. 743.³⁰

18. During the prehearing comment period (December 11, 2006, through January 10, 2007), approximately 200 persons filed letters opposing portions of the proposed rules and requesting that a hearing be held on the proposed rules.³¹

19. On the day of the hearing, the Board placed the following documents into the record:

- (a) the Request for Comments as published in the State Register (Exhibit A);
- (b) the Proposed Rules as approved by the Revisor of Statutes (Ex. C);
- (d) the SONAR (Ex. D);

²⁶ Ex. K. 3.

²⁷ Ex. K. 1.

²⁸ Ex. E.

²⁹ Ex. K. 2.

³⁰ Ex. F.

³¹ Ex. I.

- (e) a copy of the Department's December 6, 2006, letter mailing the SONAR to the Legislative Reference Library (Ex. E);
- (f) The Dual Notice as published in the State Register (Ex. F);
- (g) the DOLI's Certificate of Mailing the Notice of Hearing to the Rulemaking Mailing List and its Certificate of Accuracy of the Mailing List (Ex. G);
- (h) the DOLI's Certificate of Giving Additional Notice pursuant to the Additional Notice Plan (Ex. H);
- (i) a copy of the Department's December 6, 2006, letter to the Chairs and Ranking Minority Members of the Senate Environment, Agriculture and Economic Development Budget Division Committee, the Senate Jobs, Energy & Community Development Committee, the House Jobs and Economic Opportunity Policy and Finance Committee, and the House Commerce and Financial Institutions Committee (Ex. K 2);
- (j) a copy of the Department's October 26, 2006, letter to the Department of Finance and the Department of Finance response (Ex. K3); and
- (k) requests for hearing and comments in opposition to the proposed rule (Ex. I).

20. The Administrative Law Judge concludes that the Board has met all of the procedural requirements established by statute and rule.

Statutory Authority

21. As statutory authority for the proposed rules, the DOLI cites Minn. Stat. § 16B.59, which states that the DOLI "shall administer and amend a state code of building construction." Minn. Stat. § 16B.61, subd. 1, states that "[t]he commissioner shall by rule establish a code of standards for construction, reconstruction, alteration, and repair of buildings." Minn. Stat. § 16B.63, subd 6 states that the commissioner shall approve amendments to the code deemed "to be reasonable in conformity with the policy and purpose of the code and justified under the particular circumstances." The Department of Administration Reorganization Order No. 193, dated April 4, 2005, transferred responsibilities related to the State Building Code to the Department of Labor and Industry. The Administrative Law Judge finds that these statutory provisions grant the Department general authority to adopt the proposed rules.

Impact on Farming Operations

22. Minn. Stat. § 14.111 imposes an additional notice requirement when rules are proposed that affect farming operations. In essence, the statute requires that an agency must provide a copy of any such proposed rule change to the Commissioner of Agriculture at least thirty days prior to publishing the proposed rule in the State Register.

23. The proposed rules do not impose restrictions or have a direct impact on fundamental aspects of farming operations. The Administrative Law Judge finds that the proposed rule change will not affect farming operations in Minnesota, and thus finds that no additional notice is required.

Additional Notice Requirements

24. Minn. Stat. § 14.131 requires that an agency include in its SONAR a description of its efforts to provide additional notification to persons or classes of persons who may be affected by the proposed rule or must explain why these efforts were not made. The Department made significant efforts to inform and involve interested and affected parties in this rulemaking. The following individuals and groups received notice of the proposed rule amendments from the Department: members of various committees of the DOLI; the Metropolitan Council; the League of Minnesota Cities; the Builders' Association of Minnesota; the Builders' Association of the Twin Cities; the Minnesota Masonry & Plaster Association; the American Council of Engineering Companies of Minnesota; the American Society of Civil Engineers, Minnesota Section; the International Masonry Institute; the Minnesota Concrete Masonry Association; the Minnesota Concrete Foundation Association; and all municipal code officials and others involved in code administration.³²

25. The Administrative Law Judge finds that the Board fulfilled its additional notice requirement.

Statutory Requirements for the SONAR

Cost and Alternative Assessments in the SONAR

26. Minn. Stat. § 14.131 requires an agency adopting rules to include in its SONAR:

³² Ex. D, SONAR p. 6.

- a. a description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule;
- b. the probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues;
- c. a determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule;
- d. a description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule;
- e. the probable costs of complying with the proposed rule, including the portion of the total costs that will be borne by identifiable categories of affected parties, such as separate classes of governmental units, businesses or individuals;
- f. the probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of governmental units, businesses or individuals; and
- g. an assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference.

27. With respect to the first requirement, the Department indicated in the SONAR that those who will primarily be affected by the proposed rule changes are residential contractors and builders, designers, certified building officials, building materials components manufacturers, and homeowners.³³

28. With respect to the second requirement, the Department estimated that there would be no cost to the Department or any other agency associated with the implementation and enforcement of the proposed rules. The Department does not foresee that the proposed rules would have any likely impact on any other state agencies or the State's general fund.³⁴

³³ Ex. D, SONAR p. 3.

³⁴ *Id.* p. 3.

29. With respect to the third requirement, the DOLI stated in the SONAR that it is not aware of less costly or less intrusive methods for achieving the purpose of the proposed rules.³⁵

30. With respect to the fourth requirement, the Department indicated that it did not seriously consider any substantial alternative methods for achieving the purposes of the proposed rules because the statute directs the Department to conform the code with the model codes generally used throughout the United States, insofar as practicable.³⁶

31. With respect to the fifth requirement, the DOLI observed that the proposed rule only affects new construction or remodeling; it does not require any changes to existing buildings. The Department stated that the probable costs of complying with the proposed rules are indistinguishable from the rules it is replacing. The Department identified three areas that could result in additional costs that would likely be passed onto homeowners. First, proposed rule 1309.0301 would require sprinklers in two-family dwellings and town homes with more than 9,250 square feet of aggregate space. The square footage threshold was determined after consultation with a Minnesota builders association and fire service personnel. Second, proposed rule 1309.0210 would repeal an amendment to the 2000 IRC which could result in increased cost to homeowners related to egress windows. Third, proposed rule 1309.0311, which in part addresses stairways, could result in increased cost to homeowners.³⁷

32. With respect to the sixth requirement, the DOLI indicated in the SONAR that the probable costs associated with failure to adopt the proposed rules would be indistinguishable from the costs of not adopting the proposed rules.³⁸

33. With respect to the seventh requirement of Minn. Stat. § 14.131, the DOLI indicated in the SONAR that there is no conflict between the proposed rules and federal regulations because there are no existing federal regulations relating to subjects encompassed in the proposed rules.³⁹

Performance-Based Regulation

34. Minn. Stat. § 14.131 also requires that an agency include in its SONAR a description of how it “considered and implemented the legislative policy supporting performance-based regulatory systems set forth in section 14.002.” Section 14.002 states, in relevant part, that “whenever feasible, state agencies must develop rules and regulatory programs that emphasize superior

³⁵ *Id.*

³⁶ *Id.*

³⁷ *Id.* pp. 3-4

³⁸ *Id.* at 4.

³⁹ *Id.*

achievement in meeting the agency's regulatory objectives and maximum flexibility for the regulated party and the agency in meeting those goals." The Department is directed by statute to adopt a code that conforms "insofar as practicable to model building codes generally accepted and in use throughout the United States."⁴⁰

35. The Administrative Law Judge concludes that the DOLI has satisfied the requirements of Minn. Stat. § 14.131 for assessing the impact of the proposed rules.

Cost to Small Businesses and Cities under Minn. Stat. § 14.127

36. Effective July 1, 2005, under Minn. Stat. § 14.127, agencies must "determine if the cost of complying with a proposed rule in the first year after the rules takes effect will exceed \$25,000 for: (1) any one business that has less than 50 full-time employees; or (2) any one statutory or home rule charter city that has less than ten full-time employees."⁴¹ Although this determination is not required to be included in the SONAR, the statute states that the agency "must make [this] determination . . . before the close of the hearing record" and the Administrative Law Judge must review the determination and approve or disapprove it.⁴²

37. The Department determined that the costs for small businesses or small cities associated with the proposed rules will not exceed \$25,000 in the first year after the rule takes effect.⁴³

38. Administrative Law Judge approves the finding that the costs of complying with the proposed rule changes will not exceed \$25,000 for any small city or business in the first year after the rules take effect.

Analysis of the Proposed Rules

39. This Report is limited to discussion of the portions of the proposed rules that received critical comment or otherwise need to be examined, and it will not discuss each comment or rule part. Persons or groups who do not find their particular comments referenced in this Report should know that each and every suggestion, including those made prior to the hearing, has been carefully read and considered. Moreover, because some sections of the proposed rules were not opposed and were adequately supported by the SONAR, a detailed discussion of each section of the proposed rules is unnecessary.

40. The Administrative Law Judge finds that the Department has

⁴⁰ *Id.*

⁴¹ Minn. Stat. § 14.127, subd. 1.

⁴² Minn. Stat. § 14.127, subd. 2.

⁴³ SONAR at 7.

demonstrated, by an affirmative presentation of facts, the need for and reasonableness of all rule provisions not specifically discussed in this Report. The Administrative Law Judge also finds that all provisions not specifically discussed are authorized by statute and there are no other problems that would prevent the adoption of the rules.

41. During the prehearing and post-hearing comment periods, and during the hearing itself, numerous comments were made both in support of and in opposition to the Department's proposed rules. Based on these comments, it is evident that there are twenty principal areas of controversy. They are described below.

1309.202 R202, Connectors and Fasteners

42. The Division proposed to amend the 2006 IRC definitions section, R202, to add definitions for a number of terms used in the residential code to make sure they were "clearly" understood.⁴⁴ Among the proposed defined terms are "fastener" and "connector."⁴⁵ The Division notes that the terms "connector" and "fastener" are commonly misunderstood.⁴⁶ The IRC/IBC Structural Review Committee, an advisory committee to the IRC, has worked on the definition of these terms.⁴⁷

43. The proposed rule defines a "connector" as a "device for fastening together two or more pieces, members, or parts, including anchors, fasteners, and wall ties."⁴⁸ The proposed rule defines a "fastener" as a "device for holding together two or more pieces, parts or members."⁴⁹

44. Rex Swanson, Acorn Lumber Company, and Bill Theobald, Boise Engineering, in separate emails to the Division, supported the proposed definitions of "fastener" and "connector."⁵⁰ Both Mr. Swanson and Mr. Theobald expressed concern that other commentators were attempting to narrowly define "connector" to mean a manufactured mechanical contrivance designed to transfer load from one structural member to another and that this narrow definition was not consistent with the IRC.⁵¹ Both observed that trying to draw a distinction between the terms would muddy other provisions of the IRC.⁵²

45. In a post-hearing comment, Rick Davidson, Municipal Building Officer, City of Maple Grove, observed that while the proposed definitions of

⁴⁴ Ex. D, SONAR at 9.

⁴⁵ *Id.* at 10.

⁴⁶ Department letter, February 15, 2007.

⁴⁷ Ex. I, 2, E mail of Rex Swanson, Acorn Lumber, January 9, 2007.

⁴⁸ Ex. C, 1309.0202, Section R202, subp. 2.

⁴⁹ Ex. C, 1309.0202, Section R202, subp. 2.

⁵⁰ Ex. I, 2, Email of Rex Swanson, Acorn Lumber, January 9, 2007.

⁵¹ *Id.*

⁵² *Id.*

fastener and connector are almost identical, there was still confusion. He noted that while both a fastener and a connector are defined as devices intended to join together two or more pieces, members or parts, in some instances the proposed code uses the terms in a manner that indicates they are distinct terms.⁵³ Mr. Davidson asked how the terms were different and went on to ask a series of questions about the terms. “Is a bolt a connector or fastener? What about nails, staples, screws, metal plates, lag bolts, glue, or plastic cable ties? Does a bolt hold together or fasten together?”⁵⁴ Mr. Davidson noted that in the IRC a fastener is a nail, screw or staple, and a connector may be a metal strap, a plate, a hanger, a tie, or other device and cites both references from various sections of the 2006 IRC and from manufacturers information. Mr. Davidson believes that the proposed definitions of fastener and connector “serve only to confuse the user of the IRC. The facts speak for themselves. Either the definitions should be deleted or they should be rewritten in a manner reflecting industry usage and understandability.”⁵⁵

46. Responding to the comments, the Department stated that it intended that the terms connector and fastener are to be used interchangeably throughout the Code.⁵⁶

Frequently there is a common misconception that the term fastener refers only to nails, screws and staples, and that the term connector refers only to pre-engineered metal connectors. This misconception has led to confusion, inconsistent use, and inconsistent enforcement. The Division intends to clear up this misconception by amending the model code with definitions to make clear that the two terms are used interchangeably. As such, the Division has determined that the proposed definitions for the terms connector and fastener will not be modified.⁵⁷

47. The Division intends that the terms fastener and connector would be used interchangeably. The proposed definitions are similar but not identical. The definition of connector uniquely refers to “anchor” and “wall ties.”⁵⁸ As Mr. Davidson notes, sections of the proposed code draw distinctions between a fastener and a connector.⁵⁹ Because the terms are defined and used somewhat

⁵³ Mr. Davidson cites proposed 1309.0404, subp. 1, 5, which reads in part: “the rim board shall be attached to the sill with a 20 gage metal angle clip at 24 inches on center, with five 8d nails per leg, or an approved connector supplying 230 pounds per linear foot capacity.”

⁵⁴ Rick Davidson letter, February 8, 2007.

⁵⁵ *Id.* p. 3. Mr. Davidson also submitted a final response on this issue.

⁵⁶ Department letter, February 15, 2007.

⁵⁷ Department letter, February 15, 2007, Responses to Written Submissions and Modifications to the Proposed Rules, p. 1.

⁵⁸ Ex. C.

⁵⁹ 1309.0404, subp. 1, 5.

differently, they are not truly interchangeable. The ALJ does not, however, find that the proposed rule is defective. The suggestion that the terms are interchangeable may be not be completely accurate, but this statement is in a letter from the Division and not in the proposed final rule. If the Department wants to add language modifying the definitions when it adopts a final rule, the new language will be reviewed to determine if it constitutes a substantial change.

48. The Division considered the final comments and determined to retain the proposed rule as described in Finding 43.⁶⁰

49. The proposed amendments to the definitions in R202 are found to be needed and reasonable. If the Division amends the definitions to be different from those described in Finding 43 it will have to submit the language for a substantial change review by the Office of Administrative Hearings.

1309.0301 R301.1.4, Design Criteria

50. The proposed rule amends section R301, adding a section that would require all IRC-2 and IRC-3 buildings to have an automatic sprinkler system unless the building has 9,250 square feet or less of floor area.⁶¹

51. The Builders Association of Minnesota (BAM) objected to the rule as proposed by the Department.⁶² BAM initially asked the Department to omit the square footage of attached garages from the calculation used to determine the threshold size that triggered the requirement for installation of fire suppression.⁶³

52. The Division proposed changing the code provision related to residential fire sprinklers because individual municipal building code requirements had made it increasingly difficult for builders to understand the residential sprinkler requirements. Currently, building codes set a threshold for fire suppression systems for all municipalities that have adopted the code. Municipalities have the option of adopting/enforcing Minn. R. Chapter 1306, including fire sprinkler requirements. The Department concluded that the builders have found it more difficult to know if the code requirements apply.⁶⁴

53. The Division met with fire service personnel and BAM to discuss the issue. The Department believed that the parties ultimately agree that an appropriate minimum threshold would be 9,250 gross square feet (GSF), including basements and garages.⁶⁵ This agreement is reflected in the proposed

⁶⁰ Department letter, February 23, 2007.

⁶¹ Ex. D, SONAR, p. 11; 1308.0301, R301.1.4.

⁶² Department letter, February 15, 2007.

⁶³ Ex. M-1, p. 8.

⁶⁴ Department letter, February 15, 2007.

⁶⁵ Testimony of Tom Brace, Executive Director of the Minnesota State Fire Chiefs Association, Tr. 158.

rule.⁶⁶ Nyle Zikmund, Fire Chief for Spring Law Park, Blaine and Mounds View Fire Departments and representative of the Minnesota State Fire Chiefs Association, confirmed agreement on the compromise language.⁶⁷ Tom Brace, Executive Director of Minnesota State Fire Chiefs Association, also supported the square foot threshold and also supported the installation of one dry head in affected garages.⁶⁸ BAM asserted that it never agreed to requiring dry heads in garages but at the hearing did not object to the 9,250 GSF provision.⁶⁹

54. Pam Perri Weaver of BAM requested that the Department provide additional cost analysis regarding the installation of a dry head sprinkler beyond that provided in the SONAR.⁷⁰ The proposed rule would require attached garages in a townhouse configuration to have a dry head sprinkler.⁷¹ A dry head would cost about \$20 per unit. A preaction dry head costs about \$70 to \$100. Installation costs less than \$300 per unit.⁷² The Division estimates that the cost for installation of a fire suppression system within a structure is between \$2.00 and \$3.00 per GSF and that much of the cost will be borne by the homeowner but will likely be offset by a reduction in insurance premiums.⁷³

55. The proposed rule requires all IRC -1, IRC-2, and IRC-3 buildings containing state licensed facilities to have fire suppression systems, when the requirement is “more specific” than applicable facility licensing provisions.⁷⁴ Many state licensing statutes and rules have specific requirements about fire suppression systems.

56. At the hearing, the ALJ suggested that the Division reconsider the phrase “whichever is more specific” to “whichever is more restrictive.”⁷⁵

57. The Division accepted the ALJ’s suggestion.⁷⁶

58. The proposed amendments to the rule pertaining to stated licensed facilities, as modified in the fashion noted in the preceding paragraphs, have been shown to be needed and reasonable. The modification does not result in a rule that is substantially different from the rule as originally proposed.

59. The Department has demonstrated that the proposed rules pertaining to fire suppression are necessary and reasonable.

⁶⁶ Department letter, February 15, 2007.

⁶⁷ Tr. 147.

⁶⁸ Tr. 158. See also Exs. O-1- O-14 (photos showing various townhouses and construction data.)

⁶⁹ Ex. M-1, p. 9.

⁷⁰ Testimony of Pam Perri Weaver, Tr. 190.

⁷¹ Tr. 153-154.

⁷² Chief Nyle Zickmund, Tr. 78; Department letter of February 15, 2007.

⁷³ Department letter of February 15, 2007, p. 4.

⁷⁴ Ex. C, 1309.0301, R 301.1.4.1.

⁷⁵ Tr. 153.

⁷⁶ Department’s letter of February 15, 2007, p. 4.

Table R301.5, Live Loads.

60. The 2006 IRC establishes the minimum uniformly distributed live loads for various portions of a residential design.⁷⁷ This table includes live loads in attics.

61. Bob Mochinski, Littfin Lumber, representing the Minnesota Truss Manufacturers Association, asked the Division to modify Table R301.5, footnote g, to address the "lack of need to put this load on house trusses or trusses that are insulated."⁷⁸ This change was proposed at the national level at the Orlando ICC Code Development Hearing held on September 2006.⁷⁹

62. The Department agrees that Table R301.5, footnote g, should be modified. The revised footnote g reads:

For attics with limited storage and constructed with trusses, this live load need be applied only to those portions of the bottom chord where there are two or more adjacent trusses with the same web configuration capable of containing a rectangle 42 inches high or greater by 2 feet wide or greater, located within the plane of the truss. The rectangle shall fit between the top of the bottom chord and the bottom of any truss member, provided that each of the following criteria is met:

1. The attic area is accessible by a pull-down stairway or framed opening in accordance with Section R807.1; and
2. The truss has a bottom chord pitch less than 2:12.
3. Required insulation depth is less than the bottom chord member depth

The bottom chords of trusses meeting the above criteria for limited storage shall be designed for the greater of the actual imposed dead load or 10 psf, uniformly distributed over the entire span.

63. The proposed amendments to Table R301.5, as modified in the fashion noted in the preceding paragraphs, have been shown to be needed and

⁷⁷ Table R.301.5

⁷⁸ Testimony of Bob Mochinski, Tr. 169.

⁷⁹ Department letter, February 15, 2007, p. 5.

reasonable. The modifications do not result in a rule that is substantially different from the rule as originally proposed.

1309.0310 R310.1.5, Replacement Windows

64. The proposed rule exempts replacement windows from the requirements of Section R310.1 when the replacement window meets certain exceptions. The proposed rule provided that a replacement window should not reduce the existing height and width opening by more than 2 inches (51 mm) in either dimension.⁸⁰ The IRC Advisory Committee recommended that the proposed rule be changed from two inches to five inches.⁸¹

65. The Division believes that the Advisory Committee was concerned that the two inch reduction standard eliminated a number of window manufacturers.⁸²

66. Rick Davidson, City of Maple Grove Building Official, observed that the proposed amendment to the replacement window rule did not meet either of the two prerequisites for amendment of the IRC because it was not necessary to clarify the code and was not necessary due to local conditions.⁸³

67. BAM requested that the Department modify the rule. BAM argued that only a few window brands complied with the two inch requirement and questioned whether life and safety egress should be directed at exits that would not involve breaking a window.⁸⁴

68. After reviewing the comments, the Division agreed that the proposed rule should be modified. The L-5 amendment changed R310.1.5 to read:

R310.1.5 Replacement windows. Replacement windows installed in buildings meeting the scope of the International Residential Code shall be exempt from the requirements of Sections R310.1, R310.1.1, R310.1 2, and R310.1.3 if the replacement window meets the following conditions:

1. The window is replaced with the largest window possible of the same style.
2. The rooms or areas are not used for any Minnesota state licensed purpose requiring an egress window;

⁸⁰ Ex. C, 1309.0310

⁸¹ Department letter, February 15, 2007, p. 6.

⁸² Id.

⁸³ Rick Davidson letter, January 2, 2007, pp. 3-4.

⁸⁴ Ex. M-1, p. 17.

3. The window is not required to be replaced pursuant to a locally adopted housing or rental licensing code.⁸⁵

69. Michael Fischer, Window and Door Manufacturers Association, testified that while he was generally supportive, he was concerned about the enforceability of the word “possible.”⁸⁶ At the hearing, BAM’s representative supported the L-5 language.⁸⁷

70. The Department reviewed the language in L-5 after the hearing and agreed that it should be modified. Proposed R310.1.5, as amended after the hearing, reads:

R310.1.5 Replacement windows. Replacement windows installed in buildings meeting the scope of the International Residential Code shall be exempt from the requirements of Sections R310.1, R310.1.1, R310.1.2, and R310.1.3 if the replacement window meets the following conditions:

1. The replacement window is the manufacturer’s largest standard size window that will fit within the existing window frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for a greater window opening area than the existing window.
2. The rooms or areas are not used for any Minnesota state licensed purpose requiring an egress window; and
3. The window is not required to be replaced pursuant to a locally adopted rental housing or rental licensing code.⁸⁸

71. The Department believes that the modified language, while in keeping with the intent of the proposed rule, eliminates potential enforcement conflicts and interpretations.⁸⁹ BAM supports the amended language.⁹⁰

72. The proposed amendments to R310.1.5, as described in Finding No. 70, have been shown to be needed and reasonable. The modifications do

⁸⁵ Ex. L-5; Department letter, February 15, 2007, p. 6.

⁸⁶ Tr. 40.

⁸⁷ Testimony of K. Linner, BAM, Tr., 122.

⁸⁸ Modified R310.1.5 as corrected, Department letter, February 23, 2007, p. 1.

⁸⁹ Department letter, February 15, 2007, pp. 7-8.

⁹⁰ K. Linner letter, February 15, 2007.

not result in a rule that is substantially different from the rule as originally proposed.

1309.0311 R311.4.3.1 and R311.4.3.2 Means of Egress

73. The proposed rule governs floors and landings on each side of an exterior door.⁹¹

74. As proposed, R311.4.3.1 read in part: “(t)he exterior landing may be up to 7-3/4 inches (196 mm) below the top of the threshold...”⁹² R311.4.3.2 also used the word “may.”⁹³

75. At the hearing the ALJ suggested that the words “may be” should be replaced with the words “shall be.”⁹⁴

76. The Department agreed to modify the rules to read “shall be.”⁹⁵

77. The proposed amendments to R311.4.3.1 and R 311.4.3.2, modified as described in the prior Findings, have been shown to be needed and reasonable. The modifications do not result in rules that are substantially different from the rule as originally proposed.

R311.4.3.2 Landings

78. R311.4.3.2 requires landings at the thresholds of exterior doors.

79. During the notice period Mark Mikkelsen, Andersen Windows and Doors, and James Krahn, Marvin Windows & Doors, asked the Division to modify the proposed rule to make clear that a floor or a landing would be acceptable at an exterior door.⁹⁶

80. The Department agreed to these suggestions. At the hearing the Department offered revised language in Exhibit L-1 which reads as follows:

⁹¹ Ex. C, 1309.0311.

⁹² R311.4.3.1 (2).

⁹³ R311.4.3. 2 (1).

⁹⁴ Tr. 182.

⁹⁵ Department letter, February 15, 2007, p. 8.

⁹⁶ Ex. I. Michael Fischer, Director, Codes and Regulatory Compliance, (WDMA), also supported this change. Ex. I.

1. Landings or floors shall be permitted to be no greater than 7 3/4 inches, (196 mm) below the top of the threshold, provided the door, other than an exterior storm or screen door, does not swing over the exterior landing.
2. Landings in this subsection are not required for the exterior side of a door when a stairway that is less than 30 inches (762 mm) in height is located on the exterior side of the door. The stairway height shall be measured vertically from the interior floor surface to the finished grade.
3. An exterior landing is not required at a doorway when only a storm or screen door is installed which does not swing over the exterior landing.

81. Michael Fischer, Window and Door Manufacturers Association, (WDMA) supported the L-1 language, but observed that there is additional work being done on this issue at the International Code Council.⁹⁷ Mark Mikkelsen, Anderson Windows and Doors, supported the L-1 language.⁹⁸

82. The proposed amendments to R311.4.3.2, modified as described in the prior Findings, have been shown to be needed and reasonable. The modifications do not result in rules that are substantially different from the rule as originally proposed.

1309.0313 R313.1, Smoke Alarms, Alterations

83. The 2006 IRC requires the installation of smoke alarms when there is a qualifying alteration, repair or addition to the structure.⁹⁹ R 313.2.1 generally requires interconnected, hard-wired smoke alarms if the alteration did not expose the structure, unless there was access for wiring through an attic, basement or crawl space or the work involved the exterior of the house.

84. The Division received comments from Dave Schnerbelt, John Mennenga, Douglas Whitney, Leya Drabczak, Shelley Chapin, Jeff Wheller, Jim Butler, Julie Hultman, Dale Schoeppner, Kathy Osmonson, Scott Dornfield, Tim Krik, Tama Theis, Jeff Wheeler, Jim Butler, Dale Schoeppner, and Darren Tinklenberg requesting revision to Exceptions 2 and 3.¹⁰⁰

⁹⁷ Testimony of Michael Fischer, Tr. 43; letter, February 20, 2007.

⁹⁸ Mark Mikkelsen, Anderson Windows and Doors, letter, February 14, 2007.

⁹⁹ R313.2.1.

¹⁰⁰ Ex. I.

85. The Division reviewed the comments and agreed to alter the rule. The modified language was presented at the hearing as Exhibit L-3.¹⁰¹ As amendment by L-3, the proposed rule reads:

1309.0313.2A SECTION R313, SMOKE ALARMS.

R313.2.1 Alterations, repairs or additions. When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings, and the smoke alarms shall be interconnected and hardwired.

Exceptions:

1. Interconnection and hard-wiring of smoke alarms in existing areas shall not be required to be hardwired where the alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure.
2. Work on the exterior surfaces of dwellings, such as the replacement of roofing or siding are exempt from the requirements of this section.
3. Permits involving alterations or repairs to plumbing, electrical, and mechanical¹⁰² are exempt from the requirements of this section.¹⁰³

86. At the hearing, Rick Davidson objected to the rule and requested further modification. He noted that state law required a smoke detector in every dwelling unit.¹⁰⁴

87. The Department declined to withdraw the proposed rule, as modified. It noted that the State Fire Code requirements apply to all dwellings whether or not any repair work is done on the home.¹⁰⁵

88. The proposed amendments to R313.2.1, modified as described in the prior Findings, have been shown to be needed and reasonable. The modifications do not result in rules that are substantially different from the rule as originally proposed.

1309.0317, R317.1, Item R317.1 Dwelling Unit Separations

¹⁰¹ Tr. 30.

¹⁰² See, L-3.

¹⁰³ Ex. L-3.

¹⁰⁴ Rick Davidson letter, January 2, 2007, pp. 5-6, referring to Minn. Stat. § 299F.32

¹⁰⁵ Department letter, February 15, 2007, p. 10.

89. R317.1 establishes rules for separation of walls and floor assemblies between two-family dwellings in certain situations.¹⁰⁶

90. BAM objected to the proposed R317.1 as too complicated and confusing.¹⁰⁷ The Department met with BAM representatives prior to the hearing and agreed to modify the rule.¹⁰⁸ The principal point at issue was separation through enclosed soffit and overhangs and the application of the rule to a side-by-side duplex. A sentence to this effect was added to R317.1

91. At the hearing, the Department offered Exhibit L-8, which is an amendment to R317.1. It reads:

R317.1 Two-family dwellings. Dwelling units in two-family dwellings shall be separated from each other by wall and/or floor assemblies having not less than 1-hour fire-resistance rating when tested in accordance with ASTM E 119. Fire-resistance rated floor-ceiling and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend to the underside of the roof sheathing. Separation shall extend through enclosed soffits, overhangs and similar projections.

92. In post-hearing comments, Mr. Davidson noted that another section of the IRC, Section R602.8, item six, governs fire blocking of the cornices of a two-family dwelling at the line of the dwelling separation and that R602.8 adequately address the concerns about R317.1.¹⁰⁹

93. After reviewing the comment the Division agreed and deleted the sentence. R317.1 was modified to read:

R317.1 Two-family dwellings. Dwelling units in two-family dwellings shall be separated from each other by wall and/or floor assemblies having not less than 1-hour fire-resistance rating when tested in accordance with ASTM E 119. Fire-resistance rated floor-ceiling and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend to the underside of the roof sheathing.

¹⁰⁶ R317.1.

¹⁰⁷ Department letter, February 15, 2007, p. 10.

¹⁰⁸ *Id.*

¹⁰⁹ Rick Davidson letter, January 2, 2007, pp. 5-6.

94. The proposed amendments to R317.1, modified as described in the prior Findings, have been shown to be needed and reasonable. The modifications do not result in rules that are substantially different from the rule as originally proposed.

1309.0318, R318 Moisture Vapor Retarder

95. R318 requires that the thermal envelope of a building have a vapor retarder to control moisture.¹¹⁰

96. At the hearing, the Department proposed the language found in Exhibit L-7.¹¹¹

97. Karen Linner expressed concern that R318 would conflict with the Energy Code.¹¹²

98. After the hearing, the Division considered comments it had received and decided to withdraw the L-7 language.¹¹³ Instead the Department will modify R318 to read:

R318.1 Vapor retarders. In all above grade framed walls, floors, and roof/ceilings comprising elements of the building thermal envelope, a vapor retarder shall be installed on the warm side of the insulation. Vapor retarders installed under a concrete floor slab shall comply with section R506.2.3.
Exception: In construction where moisture or freezing will not damage the materials.¹¹⁴

99. The proposed amendments to R318.1, modified as described in the prior Findings, have been shown to be needed and reasonable. The modification does not result in rules that are substantially different from the rule as originally proposed.

1309.0403, R403, Frost Footings

100. R403.1.3.1 requires footings to be protected from frost. The rule provides an exception for qualified freestanding accessory structures less than 600 or 400 square feet.

¹¹⁰ R318.

¹¹¹ Tr. 33-34.

¹¹² Tr. 136.

¹¹³ Department letter, February 15, 2007, p. 11.

¹¹⁴ Department letter, February 15, 2007, p. 11.

101. BAM requested that the threshold trigger in the exceptions be increased to 1,000 square feet.¹¹⁵

102. At the hearing the Department offered Exhibit L-2, a proposed amendment to a different rule, 1303.1600, subp. 2. It reads:

Exception: Slab on grade construction may be placed on any soil except peat or muck for detached one-story private garage, carport, and shed buildings not larger than 3,000 square feet.

103. At the hearing Karen Linner of BAM supported the amendment of 1303.1600, subp. 2, but also wanted reference to the exception in Chapter 1309.¹¹⁶

104. After the hearing, the Division determined that it would modify R403.1.4.1. to address BAM's concerns as follows:

R403.1.4.1 Frost Protection. Except where otherwise protected from frost, foundation walls, piers and other permanent supports of buildings and structure shall be protected from frost by one or more of the following methods:

1. Extended below the frost line specified in Table R301.2.(1);
2. Constructing in accordance with Section 4403.3;
3. Constructing in accordance with ASCE 32;
4. Erected in solid rock; or
5. Constructing in accordance with chapter 1303.

Exception: Decks not supported by a dwelling need not be provided with footings that extend below the frost line.¹¹⁷

105. BAM supports the Department's amended language.¹¹⁸

106. The proposed amendments to R403.2.4.2, modified as described in the prior Findings, have been shown to be needed and reasonable. The modification does not result in rules that are substantially different from the rule as originally proposed.

¹¹⁵ Ex. M-1, p. 23.

¹¹⁶ Tr. 136.

¹¹⁷ Department letter, February 15, 2007, p. 12.

¹¹⁸ K. Linner letter, February 15, 2007.

1309.0404, R404 Foundation and Retaining Walls

107. Section R404.1 of the 2006 IRC establishes standards for concrete and masonry foundation walls.¹¹⁹ Some of these standards are set forth in tables included in Section R404.1.

108. The Division proposed modifying the IRC provision by renumbering the two subparts, deleting the remaining subparts and adding replacement tables.¹²⁰ Proposed Table R404.1 (2) would amend IRC Table R404.1 (2).¹²¹

109. A number of individuals noted objections to R404 and the requirements of proposed Table R 404.1(2) in their requests for hearing. These included Steve Kloss, Design Supervisor, Automated Building Components, Inc.; James Scheible, Branch Manager, Automated Building Components, Inc.; William Theobald, Boise Wood Products; Paul Majka, Building Resource Services, Inc.; Dan Thomas, Construction Services Manager, Centex Homes; Steven Behnke, Donnay Homes; Al Emmerich, President, Emmerich Wood; Jon Peterson, Vice President, Hans Hagen Homes; Dean Hanson, President, Hanson Builders; Cary Becker, Kootenia Homes, Inc.; Gary Laurent, President, Laurent Builders, Inc.; Bob Mochinski, Technical Services/Marketing Manager, Littfin; Tim Liester, Lyman Lumber Company; John Waldron, Lyman Lumber Company; Woody Miller, Marshall Truss Systems, Inc.; Meg Dehn, Mega Homes, Inc.; Robert Moser, Moser Homes, Inc.; Christopher Lange, Northland Truss Systems, Inc.; Chris Thompson, Homes of Distinction; Michael Swanson, Rottlund Homes; Mike Peterman, Scherer Bros. Truss Division; Bill Schnettler, Schnettler-Benning; Curt Swanson, President, Swanson Homes; Robert Day, President, Taylor Made Homes, Inc.; Ken Moore, General Manager, United Structural Components; Kirk Grundahl, Executive Director, WTCA; and Richard Kot, President, R.A. Kot Homes, Inc.¹²²

110. BAM asked the Department to amend R404.1, item 4, to permit blocking “by an approved alternate method.”¹²³ The ALJ questioned whether this language created no standard and would not be a rule.¹²⁴

111. At the hearing, William Theobald expressed concern that the proposed replacement Table R404.1 (2) would be confusing because the table required a maximum unbalanced backfill height of 7 feet 4 inches. Users of the table would need to go to another table, R404.1 (1), for additional information. Table R404.1 (1) only has values in increments of whole feet; there is no value

¹¹⁹ 1309.0404, Section R404.1.

¹²⁰ Ex. D, SONAR, p. 20.

¹²¹ Ex. C, 1309.0404, R404.1 (2).

¹²² Exs. I and N.

¹²³ Ex. M-1, p. 11; Testimony of K. Linner, Tr. 82. BAM continues to ask for the “approved alternative” language. K. Linner letter, February 15, 2007.

¹²⁴ Tr. 85.

for 7 feet four inches.¹²⁵ Mr. Theobald was of the opinion that this could lead the user to believe that they would have to move up a connection level within Table 404.1(1), which would require a Type C connector, which could imply a ¼ inch steel angle that would add significant cost to the house.¹²⁶ He noted that the prescriptive provisions in this section of IRC 2006 had been challenged in many states by a number of organizations, including the National Home Builders Association, the Concrete Masonry Association, and the Portland Cement Association.¹²⁷ Mr. Theobald asserted that the proposed rule would increase the foundation cost of an 1,800 square foot ranch house by approximately \$7,500.¹²⁸ He observed that increasing the cost of home construction would prevent some people from purchasing a home.¹²⁹ Mr. Theobald also asked that the proposed rule omit prescriptive requirements for the lateral support at the top of a foundation wall, citing the experience in other states.¹³⁰

112. Steve Brekke, Engineering Operations Manager, USP Structural Connectors, in an email to the Division, asserted that connectors cost \$1 to \$3 each and that the total cost associated with the proposed rule for a twenty-six foot long basement would be approximately \$172.00.¹³¹

113. Bill Rouleau, Structural Wood Corporation, observed that the vast majority of rim board sold in Minnesota is 1 1/8" APA Rated Rim Board and that in order to achieve the required load values for this type of rim board a starter joist lateral blocking is required 24" on center or the rim board must be doubled.¹³² He noted that current practice is lateral blocking in the first 2 joist spaces at the anchor bolt locations or about every six feet.¹³³ Mr. Rouleau said it would be difficult to estimate probable cost but in his opinion, a residence using 30-foot length joists with blocking placed 24 inches apart would cost approximately \$110 for material and labor.¹³⁴

114. The Division responded to these comments that it did not believe there was a conflict between the requirements of Table R404.1 (1) and the requirements of the modified Table R404.1 (2) because the two tables address different connections.¹³⁵ The Division noted that proposed Table R404.1(2) was initiated by Craig Oswell, Ulteig Engineers, a firm that specializes in residential structures, that had been using the values in proposed Table R404.1(2) in the

¹²⁵ Tr. 96-97,

¹²⁶ Tr. 97-98.

¹²⁷ Tr. 99.

¹²⁸ Tr. 101.

¹²⁹ Tr. 99.

¹³⁰ Tr. 100-101.

¹³¹ Attachment 10 to Department letter, February 15, 2007, pp. 12-13.

¹³² Bill Rouleau letter, February 21, 2007.

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ Department letter, February 15, 2007, pp. 12-13.

design of basement walls.¹³⁶ The Division is of the opinion that proposed Table 404.1(2) will result in lower construction costs than the unamended 2006 IRC version and will result in more uniform enforcement and would be easier to understand and apply.¹³⁷

115. Craig Oswell, a structural engineer, supports the language as proposed by the Department. He noted that the advisory committee discussed R404.1 in detail and that the amended language was consistent with current practice and follows accepted engineering logic.¹³⁸

116. The Division noted that the prescriptive requirements regarding lateral support at the top and bottom of foundation walls will enable builders to design the connections without the use of professional engineers.¹³⁹ It observed that the construction of foundation walls has changed over time. "Historically, basement walls have been thicker, shorter, and have had less backfill against them than the basements that are currently being built. The increase in height and the amount of backfill makes the connection at the top of the wall more critical than it has been in the past."¹⁴⁰ The Division provided photos of a foundation collapse in a ten-year old house. Finally, the Division disagreed with Mr. Theobald's cost estimates. The Division believes the costs associated with the proposed rule are not as significant as Mr. Theobald believes.¹⁴¹ The Division estimates that the total estimated cost for blocking, sill connection, and additional anchor bolts for a 26 foot by 26 foot basement would be \$534.¹⁴²

117. Linda Brekke, Vice President, Council of American Structural Engineers/Minnesota, still has strong reservations about the assumptions used to create amended Table R404.1 (2).¹⁴³

118. After reviewing the comments the Department elected to retain R404.1 as amended.

119. The proposed amendments to R404.1, modified as described in the prior Findings, including proposed Table R404.1(2), have been shown to be needed and reasonable. The modifications do not result in rules that are substantially different from the rule as originally proposed.

¹³⁶ *Id.*

¹³⁷ *Id.* p. 13.

¹³⁸ Craig Oswell, email, February 14, 2007.

¹³⁹ *Id.*

¹⁴⁰ *Id.*, p. 14.

¹⁴¹ Department letter, February 15, 2007, p. 14.

¹⁴² Department letter, February 15, 2007, p. 14.

¹⁴³ Letter of Linda Brekke, Vice President, CASE/MN, dated February 14, 2007.

1309.506, R506 Concrete Floors (on Ground)

120. The Division proposed the repeal of Part 1309.0506 because the 2006 IRC language, Section R506 was adequate.¹⁴⁴ R506.2.3 requires that a vapor retarder be installed under a concrete floor slab. R 506.2.3 requires either a 6 mil polyethylene sheet or an approved vapor retarder as required by Section R202.¹⁴⁵

121. BAM requested that R506 be modified to permit use of rigid foam board insulation of at least R-5 as a vapor retarder under a slab.¹⁴⁶ Ms. Linner suggested that the use of foam board was supported by research by Dr. Louise Goldberg.¹⁴⁷

122. Following the hearing, Don Sivigny, Senior Building Code Representative, contacted Dr. Goldberg and asked her to respond to Ms. Linner's representations regarding the use of foam board under a concrete slab. Dr. Goldberg told Mr. Sivigny that she had not researched the issue and only had done some very brief calculations. Dr. Goldberg told Ms. Sivigny that she agreed with the 2006 IRC requirements in R506.2.3.¹⁴⁸

123. The Division declined to modify R506.2.3 as requested by BAM.¹⁴⁹

124. The ALJ finds that the Department has demonstrated that the 2006 IRC provisions, concerning a vapor barrier under a concrete slab without an amendment for the use of foam board, are needed and reasonable.

1309.0602, R602 Wood Wall Framing

125. R602 establishes requirements for wood wall framing.

126. During the comment period, Jay Crandell, representing the Foam Sheathing Coalition, asked the Division to consider modifying sections of R602.¹⁵⁰ He noted that the changes he was suggesting were currently being considered for adoption in Virginia.¹⁵¹

127. The Division declined to modify R602, noting that the issues raised by Mr. Crandell were being studied by the ICC at the national level and that the

¹⁴⁴ Ex. D, SONAR, p. 22.

¹⁴⁵ Department letter, February 15, 2007, p. 15.

¹⁴⁶ Ex. M-1, p. 21; Testimony of K. Linner, Tr. p. 131. See also footnote 180 re: Dr. Goldberg.

¹⁴⁷ Tr. 131.

¹⁴⁸ Department letter, February 15, 2007, p. 16.

¹⁴⁹ *Id.*

¹⁵⁰ Jay Crandell, Consulting Engineer, letter on behalf of the Foam Sheathing Coalition, January 9, 2007, Ex. I.

Ex. I.

¹⁵¹ *Id.*

Division would consider the issue after the ICC completed its work.¹⁵²

128. The ALJ finds that the Department's adoption of 2006 IRC Section R602 without amendment is needed and reasonable.

1309.0613, R613, Exterior Windows and Glass Doors

129. R613 prescribes performance and construction requirements for exterior window systems installed in a wall.¹⁵³

130. Mark Mikkelsen, Manager, Code Regulatory & Technical Marketing, Andersen Windows Corp., recommended deleting 2006 IRC Section 613.2, pertaining to window sills and replacing it with language that would require installation of window guards.¹⁵⁴ At the hearing, Karen Linner, BAM, suggested modifying Section 613.1 except for the first sentence.¹⁵⁵ Michael Fischer, WDMA, objected to the windowsill requirements in the 2006 IRC version of R613.2.¹⁵⁶

131. After the hearing, the Division met with the WDMA and BAM to discuss R613.¹⁵⁷ As a result of the meeting, the Division decided to amend 1309.0613 Section R613 to read:

R613.1 General. This section prescribes performance and construction requirements for exterior window systems installed in wall systems. Windows and doors shall be installed in accordance with the manufacturer's installation instructions. Installation instructions shall be provided by the manufacturer for each exterior window or door type.¹⁵⁸

132. After further consultation with WDMA, the Department has decided to delete Section R613.1 of the 2006 IRC.¹⁵⁹ The Department acknowledges that several states had deleted this code provision and the Minnesota Legislature is considering requiring "safety screen" material on windows.¹⁶⁰ The Department now proposes to delete R613.1 in its entirety.¹⁶¹

¹⁵² Department letter, February 15, 2007, p. 16.

¹⁵³ 2006 IRC Section 613.

¹⁵⁴ Mark Mikkelsen letter, Ex. I.

¹⁵⁵ Department letter, February 15, 2007, p. 16.

¹⁵⁶ Michael Fischer letter, February 20, 2007.

¹⁵⁷ *Id.*

¹⁵⁸ Department letter, February 15, 2007, p. 16.

¹⁵⁹ Department letter, February 23, 2007, p. 2.

¹⁶⁰ *Id.*

¹⁶¹ *Id.*

133. The ALJ finds that the Department's deletion of R613.1 is needed and reasonable. The modifications do not result in rules that are substantially different from the rule as originally proposed.

1309.0703, Table R703.4

134. Lawrence Grubb submitted a post-hearing comment referring to ¼ inch thick plywood panel siding.

135. The Division notes that Table R703.4 refers to a minimum 3/8 inch plywood siding. The Division elected not to amend Table R703.4.¹⁶²

136. The ALJ finds the Department has demonstrated the need and reasonableness of Table R703.4 without further amendment.

1309.0703, R703.6.3 Exterior Covering

137. Exterior walls have to be weather-resistant. Water can damage many of the materials used in constructing an exterior wall. It can cause wood sheathing to rot and can cause mold and mildew to grow in the wall assembly. In order to prevent this problem, the IRC requires installation of a water-resistant exterior wall envelope for most types of exterior wall construction.¹⁶³

138. The water-resistive barrier must address two problems; the wall needs to resist exterior liquid water from penetrating to the wood surfaces, but the wall must also permit interior water vapor to flow through the wall to the exterior.¹⁶⁴

139. Generally, the IRC requires exterior walls to contain a water-resistant barrier behind the exterior veneer.¹⁶⁵ The specifications for the water-resistive barrier are found in Section 703.2.

Water-resistive barrier. One layer of No. 15 asphalt felt, free from holes and breaks, complying with ASTM D 226 for Type I felt or other approved water-resistive barrier shall be applied over studs or sheathing of all exterior walls.¹⁶⁶

140. The IRC has special provisions for various kinds for wall coverings.¹⁶⁷ One of the special provisions concerns walls covered with exterior

¹⁶² Department letter, February 23, 2007, p. 4.

¹⁶³ IRC Section R703.1. There are different requirements for concrete or masonry walls. IRC 703.1, Exception 1.

¹⁶⁴ Department letter, February 15, 2007, p. 19.

¹⁶⁵ IRC Section R703.1.

¹⁶⁶ IRC R703.2.

¹⁶⁷ See R703.5, wood shakes and shingles.

plaster, including stucco.¹⁶⁸ The IRC modified the water resistive barrier requirements for exterior plaster walls:

R703.6.3 Water-resistive barriers shall be installed as required in Section R703.2 and, where applied over wood-based sheathing, shall include a water-resistive vapor-permeable barrier with a performance at least equivalent to two layers of Grade D paper.¹⁶⁹

Exception: Where the water-resistive barrier that is applied over wood-based sheathing has a water resistance equal to or greater than that of 60 minute Grade D paper and is separated from the stucco by an intervening, substantially nonwater-absorbing layer or designed drainage space.¹⁷⁰

141. The 2006 IRC does not define “Grade D paper.”¹⁷¹ The term “Grade D” comes from an old FHA/HUD Standard Specification UU-B-790a, which is no longer easily accessible.¹⁷² The Division believes that Grade D papers are made with asphalt, but with a smaller amount of asphalt than other more water resistant papers.¹⁷³ On the other hand, Charles Lane describes Grade D as a 100 percent sulfate pulp fiber material with no asphalt content.¹⁷⁴

142. R703.6.3 does not mandate the use of Grade D paper. Instead the code requires the installation of a water-resistive barrier “at least equivalent to two layers of Grade D paper.” Grade D paper has a “minute rating” based on the time the paper can be placed in direct contact with water before it soaks through.¹⁷⁵ Grade D paper comes in 10, 15, 30 and 60 minute ratings.¹⁷⁶ IRC R703.6.3 does not specify the minute rating of Grade D paper in non-exception applications.¹⁷⁷

¹⁶⁸ IRC R703.6.

¹⁶⁹ The Minnesota Building Code has required the use of two layers of Grade D paper over wood base sheathings since 1982. Letter of Steven Pedracine, Executive Director, Minnesota Lath and Plaster Bureau, December 19, 2006.

¹⁷⁰ Section R703.6.3.

¹⁷¹ Email response from Steven Herrick to question from OAH, dated March 12, 2007; Charles Lane, President, Environmental Process, Inc., dated February 14, 2007.

¹⁷² *Id.*

¹⁷³ *Id.* See also email of Thomas Imriter, February 7, 2007 referring to “(y) our recent decision (sic) to remove the required 2-layers of “D” paper (an asphalt impregnated Kraft paper)...”

¹⁷⁴ Charles Lane, President, Environmental Process, Inc., dated February 14, 2007.

¹⁷⁵ Steven Pedracine, Executive Director, Minnesota Lath and Plaster Bureau, letter, December 19, 2006.

¹⁷⁶ *Id.*; Thomas Butt, *Water Resistance and Vapor Permeance of Weather Resistive Barriers*, Journal of ASTM International, November/December 2005, Vol. 2, No. 10.

¹⁷⁷ *Id.*

143. The Department did not initially propose to revise IRC R703.6.3.¹⁷⁸ The Department received numerous comments opposing the adoption of IRC R703.6.3. Many of the comments objected that the proposed rule was too restrictive and discriminated against alternative products, specifically #15 asphalt felt.¹⁷⁹ They argued that in many cases #15 was superior to Grade D paper. The comments suggested modifying the R703.6.3 to expressly permit two layers of No. 15 asphalt felt. Dr. Goldberg asserted that R703.6.3 was not supported by the available technical data.¹⁸⁰

144. The Division held a meeting on January 10, 2007, that was attended by approximately 15 individuals, including Dr. Goldberg, representatives of the Minnesota Lath & Plaster Bureau and a number of professional engineers.¹⁸¹ The group discussed R703.6.3 and asked Dr. Goldberg to draft proposed language. Dr. Goldberg drafted the L-4 text, which was considered and accepted by the Division.¹⁸² The text of L-4 was presented as an exhibit at the hearing.¹⁸³

145. At the hearing, the Department offered Exhibit L-4, which changed R703.6.3 to read:

R703.3.6.3 Water-resistive barriers. Water-resistive barriers shall be installed as required in Section R703.2 and, where applied over wood-based sheathing, shall include two layers of a water-resistive vapor-permeable barrier. Each layer shall meet both of the following requirements:

1. A water resistance not less than that of 60-minute Grade D paper; OR a

¹⁷⁸ Department letter, February 15, 2007, pp. 17- 23.

¹⁷⁹ Letters from Rodney E. Erickson, AE Conrad Company, Bob Ruff, Collins O.Y. Ofori-Amanfo, Paul Courchane, Kim Bartz, Larry Houns, Rob Roach, Steven Caouette, Scott Swanson, Stephen Donnelly, Richard Braun, Bret Palmer, Chuck Thiel, Murray Schomburg, Scott Parenteau, Kevin Larson, Timothy J. Conroy, Mary Jo Lecy, Patrick R. Forliti, Michael J. Conroy, Jeffrey M Schwartz, Brian Mulcahy, Thomas G. Panek, John Nesse, Douglas C. Lingren, Keith Waters, Jon Anderson, Daniel K. Gausman, Edward Liljedahl, Brad Obert, Thomas D. Sindelar, John W. Cunningham, Loren Prange, Steve Brisson, Brian Peterson, Brian Felber, and Louise F. Goldberg. Ex. I.

¹⁸⁰ Louise Goldberg, PhD, Director, Building Physics and Foundation Research Programs, University of Minnesota, letter, January 3, 2007. Ex. I.

¹⁸¹ Department letter, February 15, 2007, Attachment 13. (The letter incorrectly cites the list of attendees as "Attach. 12.")

¹⁸² Tr. 32.

¹⁸³ The Department's letter, February 15, 2007, refers to discussions "since the hearing" regarding the L-4 amendment. Department representatives, responding to an inquiry from OAH, have indicated that in fact there were no post hearing discussions regarding the L-4 amendment.

minimum hydrostatic head of 60.9 cm when tested in accordance with hydrostatic pressure test method AATCC 127-1998; OR a minimum water transudation time of 60 minutes when tested in accordance with ASTM D-779.

2. A water vapor permeance not less than that of no. 15 felt; OR a minimum permeance rating of 8.5 gr/h. ft².in Hg (US perm) (4.9×10^{-10} kg/Pa.s.m²) when tested in accordance with Procedure B of ASTM E96.

Exception: One layer of water-resistive barrier complying with R703.2 is permitted when a drainage space that allows bulk water to flow freely behind the cladding is provided.

146. The L-4 language modifies R 703.6.3 in several respects. First, the L-4 language establishes that the two layers that form the water resistant barrier must meet one of three tests for water resistance. Second, the two layers of material must also meet one of two water vapor permeance tests. Third, the L-4 language removed the Exception's reference to 60 minute Grade D paper and instead referred to one layer of material complying with R 703.2.

147. Jennifer Thompson, Hammargren & Meyer, P.A., argues that the Department's modification of 703.6.3 is substantially different from the proposed rule because it permits the use of 15# felt paper.¹⁸⁴ Ms. Thompson asks that the ALJ "hear the full and complete testimony on the efficacy of 15# felt versus Grade D paper as weather-resistive barriers in stucco applications."¹⁸⁵ Ms. Thompson also argued that evidence obtained through litigation indicated that #15 felt paper was not as good as or superior to Grade D paper in stucco applications and adoption of the proposed amendment to R 703.6.3 would adversely affect litigation by homeowners regarding wet home cases.

148. Bruce Boerner, PE, of Advanced Consulting & Inspections, noted that the executive summary of Dr. Goldberg's report indicated that 2 layers of #15 felt was not advisable for plywood sheathing and probably should not be used with OSB but would be acceptable for fiberboard.¹⁸⁶ Mr. Boerner noted that the L-4 language made no reference to the type of wood sheathing material used in stucco wall construction.

¹⁸⁴ Jennifer A Thompson, Hammargren & Meyer, P.A., letter on behalf of Patrick Lee O'Hallaron and Julie Doherty, Fabyanski, Westra, Hart & Thomson; J. Scott Andresen, February 15, 2007.

¹⁸⁵ *Id.*

¹⁸⁶ Bruce Boerner, letter, February 23, 2007.

149. Charles Lane objects to any proposed language that attempts to make asphalt felt products (15# felt) equivalent to Grade D. "It is critical to understand that Grade D paper must have relatively low water-resistive properties, and relatively low water-vapor resistive properties to properly manage water intrusions behind stucco clad walls with wood sheathing. Grade D paper easily permits both liquid water and water vapor to pass through material. Grade A paper "resists" moisture transmission through the material; whereas Grade D paper "encourages" moisture transmission through the material."¹⁸⁷

150. Lawrence W. Grubbe, Ph.D., FBS, reported: "All of the hundreds of failures that I have observed are related to bulk water failures not to the water vapor transport performance of the wall system. The physical properties of asphalt-impregnated felt and Grade D building paper are very different. Specifically, when subjected to bulk water intrusion, asphalt-impregnated felt paper absorbs water and swells, filling the drainage plane between the stucco cladding and the sheathing. Grade D building paper does not absorb water and swell appreciably, and the drainage plane is not appreciably compromised."¹⁸⁸

151. Thomas Irmiter, President of FBS, reported that FBS has provided over 1500 inspections on homes damaged by exterior bulk water intrusion. According to Mr. Irmiter, over 60% of these homes had a stucco exterior and that in all but two instances, the homes had either one or two layers of #15 organic asphalt felt. Mr. Irmiter stated testing of #15 felt had shown that the material is not truly water repellent and suggested that the IRC specified Grade D paper because it would not break down after wetting and rewetting as #15 felt does.¹⁸⁹ "The simple fact is that "D" paper will be a lot more forgiving when the lath is overfastened and the flashing joints aren't done perfectly."¹⁹⁰ Mr. Irmiter believes that Dr. Goldberg's report regarding testing of #15 felt does not address issues regarding water intrusion he has observed in the field.¹⁹¹

152. Karen Linner, Director of Codes and Research for BAM, supported the L-4 language.¹⁹² She noted that #15 felt papers have been widely and successfully used by the industry. She also observed that Grade D paper does not guarantee against moisture intrusion and that pan flashing, not the water-resistant barrier, was the key to the moisture problem in stucco homes. In her final comments, Ms. Linner acknowledged that there is no unified agreement among local and national codes, building scientists, forensic engineers or architects that Grade D paper is a superior product behind stucco.¹⁹³

¹⁸⁷ Charles Lane, Environmental Process, Inc., letter, February 14, 2007.

¹⁸⁸ Lawrence W. Grubbe, letter February 14, 2007.

¹⁸⁹ Thomas Irmiter, President, Forensic Building Science, Inc., letter February 14, 2007.

¹⁹⁰ Thomas Irmiter, letter, February 22, 2001

¹⁹¹ *Id.*

¹⁹² Karen Linner, letter, February 23, 2007.

¹⁹³ K. Linner, letter, February 23, 2007, p. 4.

153. Mark Chauvin, P.E., Wiss Janney, Eistner Associates, Inc. (WJE), reported that “ WJE has observed almost as many damaged homes that had two layers of Grade D paper installed behind the stucco as those which had one or two layers of #15 felt paper.”¹⁹⁴ He believes that water problems are related to flashing, and not the type of paper used.¹⁹⁵

154. BAM supports the Department’s amended language.¹⁹⁶ Mark Mikkelson, Anderson Windows, supports the Department’s amended language.¹⁹⁷ Thomas Irmiter, President, Forensic Building Science, Inc., supported the amended language with the exception of subpart 5.¹⁹⁸ Bruce Boerner, Advance Consulting and Inspection, believes the Department should require flashing in other situations.¹⁹⁹ Dave Olson, Technical Services Manager, Fortifiber Building Systems Group, suggested that all reference to #15 felt should be removed from the proposed rule.²⁰⁰

155. In response to these comments the Department points to other provisions in the building code that deal with water not getting behind water resistive barriers.²⁰¹

The weather resistive barrier is only one component of exteriors [sic] walls with stucco cladding. The code addresses some components, such as the interior vapor barrier and the minimum amount of insulation.

... The building code requires that flashing and other measures to [sic] taken to prevent bulk liquid water from entering the wall cavity.²⁰²

The Department noted that many of the comments are concerned with “issues of the presence of bulk water, and not of problems with the paper, it is the failure at another point, non-compliance with other provisions of the code.”²⁰³ The Department observed that the issue of the composition of the weather resistive barrier over wood-based sheathing with stucco cladding can be approached from two directions -- one emphasizing permeability, the other concentrating on water resistance.²⁰⁴ Put another way, the Department allows choice of whether one uses material that allows water vapor to flood

¹⁹⁴ Mark Chauvin, P.E. Wiss Janney, Eistner Associates, Inc, letter February 23, 2007.

¹⁹⁵ *Id.*

¹⁹⁶ K. Linner letter, February 15, 2007.

¹⁹⁷ Mark Mikkelson, Andersen Windows, February 15, 2007.

¹⁹⁸ Thomas Irmiter, letter, February 22, 2007.

¹⁹⁹ Bruce Boerner, letters, February 15, 2007 and February 23, 2007.

²⁰⁰ Dave Olson, letter, February 20, 2007.

²⁰¹ Department letter, February 15, 2007, p. 22.

²⁰² Department letter, February 15, 2007, p. 19.

²⁰³ Department letter of February 23, 2007, p. 5.

²⁰⁴ *Id.* pp. 5-6.

through, or whether one opts for material that resists liquid water from penetrating through walls from the outside. The Department argues that the L-4 language is reasonable because it allows a range of materials with a range of liquid water and/or water vapor transfer characteristics that can be coordinated to work with other components of the wall's design. Given that broad approach, Grade D paper remains an acceptable material under the Department's final proposal.²⁰⁵

156. Regarding the modification of the proposed rule with the L-4 language, the ALJ finds that the Department has fully complied with the APA requirements and that the L-4 language is not a substantial modification of the rule. The Department notified the public and numerous interested parties that it intended to modify the building code rules. The ALJ is persuaded that the affected public had appropriate notice that the proposed amendment to the existing rule, as proposed initially regarding this subject, could be modified further in the course of the rulemaking process. There was sufficient notice that the subject of a water-resistive or weather-resistive barrier could be considered further in the rulemaking process. Numerous parties objected to the proposed language and requested a hearing. Responding to these concerns, prior to the hearing, the Department decided to modify the language of R703.6.3. The modified language was presented at a public hearing where individuals could and did ask questions about the amendment. The public hearing afforded all parties an opportunity to respond to the Department's amendments to R703.6.3. There is no basis for suggesting that interested persons did not have notice and opportunity to be heard on this issue.

157. It is apparent to the ALJ that there is a vigorous debate within the interested communities about exterior stucco wall construction and the role of #15 felt papers in water intrusion. There is a significant difference of opinion. Grade D paper is not defined by the 2006 IRC. There is a difference of opinion on what material is used to manufacture Grade D paper. The role of the ALJ in rule making proceedings, however, is not to resolve these differences but to determine whether the Department's proposed rule is needed and reasonable. The proposed rule, as reflected in the L-4 language, establishes specific characteristics a water barrier faces and establishes specific standards for water resistance and water vapor permeance. Neither the existing rule nor R703.6.3 as it is written in the 2006 IRC have these specific, measurable standards. Under the 2006 IRC language, a builder would comply with the code by merely installing two 10 minute layers of Grade D paper, a product whose content is not defined, and comply with the code. In light of these deficiencies, the Division's amendment to R703.6.3 represents a needed and reasonable modification of the rule. The standard material must have a minimum permeability rating of 35 grams per sq. meter per 24 hours and a minimum water resistance rating of 1/6 hour. In the proposed language for 703.6.3, the parameters are set for acceptable levels of both permeability and water resistance, which will potentially

²⁰⁵ *Id.* p. 6.

allow a number of papers/products to be used. If a builder chooses to use two layers of #15 felt paper in a stucco application, it will have to be able to show that the layers of #15 felt paper meet one of the water resistance tests established by the rule. If not, using two layers of #15 felt will not comply with the rule.

158. The ALJ finds the Department has demonstrated the need and reasonableness of R703.6.3 as amended by the L-4 language. The modification does not result in rules that are substantially different from the rule as originally proposed.

1309.0703, item R703.7.4.2

159. R703.7.4.2 defines air space needed for water drainage.

160. BAM requested that the Department add an exception that would allow for the use of a drainage plane material behind masonry veneer.²⁰⁶

161. The Department agreed with BAM's suggestion. At the hearing the Department proposed an addition to R703.7.4.2 which reads:

1. R703.7.4.2 Air space. The veneer shall be separated from the sheathing by an air space of a minimum of a nominal 1 inch (25 mm) but not more than 4 ½ inches (114 mm).

Exception: The air space can be less than a nominal 1 inch when one layer of weather resistive barrier complying with R703.2 is installed and a drainage space that allows bulk water to flow freely behind the cladding is installed.²⁰⁷

162. The proposed amendments to R703.7.4.2, modified as described in the prior Findings, are found to be needed and reasonable. The modifications do not result in rules that are substantially different from the rule as originally proposed.

1309.0703 R703.8.1 Pan Flashing

163. R703.8 requires corrosion-resistant flashing to prevent entry of water into the wall cavity. The 2006 IRC R703.8 required flashing to be installed at a number of specific locations. R703.8 refers to "approved" pan flashing.

164. A number of individuals requested the Department amend R703.8 to modify the specific locations where flashing was required. These included:

²⁰⁶ Ex. M-1, p. 11.

²⁰⁷ Ex. L-6.

Mark Mikkelson, Andersen Windows; Charles Schoenwetter, Bowman and Brooke; and James Krahn, Marvin Windows and Doors.²⁰⁸

165. Karen Linner, Director of Codes and Research for BAM, urged the Department to require pan flashing for all exterior windows and doors.²⁰⁹

166. After the hearing the Division met with WDMA and BAM to discuss their concerns with R703.8.1. The Division has amended the proposed rule to read:

R703.8.1 Pan Flashing of windows and doors. A pan flashing shall be provided under all exterior windows and doors. Pan flashing shall be (a) sloped to drain water to the exterior surface of a weather-resistive barrier or flat with a sealed back dam and side dams to prevent re-entry of water into the wall cavity or onto interior finishes, and (b) maintain the thermal envelope of the building. Pan flashing made from metal must be thermally isolated from interior surfaces.

Exceptions:

1. Windows or doors installed in accordance with the manufacturer's installation instructions which include an alternate flashing method.
2. Windows or doors in detached accessory structures.
3. Skylights, bow or bay windows.
4. Doors required to meet accessibility requirements that would prevent the installation of pan flashing.
5. Repairs or replacement of existing windows and doors.
6. When a method is provided by a registered design professional.²¹⁰

167. BAM and the WDMA have agreed to this modification of R703.8.1.²¹¹

168. Bruce Boerner, Advance Consultants, supported the revised language of R703.8 with a few exceptions.²¹² Regarding Exception 1, Mr. Boerner questioned who was going to review the alternative flashing methods and decide whether the proposed method was adequate. He suggested that

²⁰⁸ Ex. I.

²⁰⁹ Letter K. Linner, February 15, 2007.

²¹⁰ Department letter, February 15, 2007, p. 20.

²¹¹ K. Linner letter, February 15, 2007; Michael Fischer letter, February 20, 2007.

²¹² Bruce Boerner, letter, February 23, 2007.

Exception 2 should include conditions under which the exception would apply and that the exception should not apply to buildings in which the exterior wall cavities are enclosed. Finally, Mr. Boerner recommended that Exception 3 for bay windows be eliminated because he believed they should be pan flashed like any other opening.²¹³

169. The Department's final rule proposal requires a type of corrosion-resistive flashing that is integrated into the building envelope at the base of a window or door opening that diverts incidental water to the exterior surface of the weather resistive barrier.²¹⁴

170. The ALJ finds the Department has demonstrated the need and reasonableness of R703.8.1, as amended. The modification does not result in rules that are substantially different from the rule as originally proposed.

1309.0802, R802 Wood Roof Framing

171. R802 establishes standards for wood roof framing. It requires that truss to wall connections must be made with "approved" fasteners or connectors.

172. Rick Davidson, Municipal Building Official, City of Maple Grove, and Bob Mochinski, of Littfin, asked the Division to modify R802. R802 was discussed by the Structural Advisory Committee.²¹⁵ Thomas Irmiter opposes toe-nailing.²¹⁶ Craig Oswell supports the Department's proposed amendment, which permits toe-nailing.²¹⁷

173. At the hearing, Mr. Mochinski provided data supporting his contention that toe-nailing trusses is an appropriate method of connecting the structure.²¹⁸ Kirk Grundahl, Executive Director, WTCA, observed that toe-nailing was an appropriate method of connecting structural pieces; that the real issue was whether the connector used provided sufficient lateral resistance parallel and perpendicular to the bearing.²¹⁹

174. The principal issue surrounding this rule is whether toe-nail fasteners are a valid connector under R 802.10.5.²²⁰ After reviewing the comments, the Department determined that toe-nailing was a recognized fastener. The Department has modified the rule by removing the word "approved."²²¹ The Department has otherwise retained the proposed rule.

²¹³ Bruce Boerner, letter, February 23, 2007.

²¹⁴ Department letter, February 15, 2007, p. 20.

²¹⁵ Department letter, February 15, 2007.

²¹⁶ T. Irmiter letter, February 22, 2007.

²¹⁷ C. Oswell letter, February 14, 2007.

²¹⁸ Tr. 161; Exs. P & Q.

²¹⁹ Kirk Grundahl letter, February 21, 2007.

²²⁰ Tr. 161; Exs. P & Q.

²²¹ Department letter, February 23, 2007, p. 7.

175. The ALJ finds the Department has demonstrated the need and reasonableness of R802.10.5, as amended. The modification does not result in rules that are substantially different from the rule as originally proposed.

R1309.0905, R905, Requirements for Roof Coverings

176. R905 establishes requirements for roof covering.

177. The proposed rule modifies the 2006 IRC R905.2.1 language to add a requirement that asphalt shingles either be fastened to a solidly sheathed deck or, the Department added, to a 1 inch thick nominal wood board.²²²

178. Rick Davidson objected to the addition of the 1 inch thick nominal wood boards.

179. The Department added the words to the proposed rule because it found that some building officials were reading the words “solidly sheathed roof” to mean that a roof sheathed with planks had to then be covered with plywood or some other wood sheathing product.²²³

180. The ALJ finds the Department has demonstrated the need and reasonableness of R905, particularly R905.2.1 as amended in the proposed rule.

Based on the Findings of Fact, the Administrative Law Judge makes the following:

CONCLUSIONS

1. The Minnesota Department of Labor and Industry gave proper notice in this matter.

2. The Department has fulfilled the procedural requirements of Minn. Stat. § 14.14 and all other procedural requirements of law or rule.

3. The Department has demonstrated its statutory authority to adopt the proposed rules, and has fulfilled all other substantive requirements of law or rule within the meaning of Minn. Stat §§ 14.05, subd. 1, 14.15, subd. 3, and 14.50 (i) and (ii).

4. The Department has demonstrated the need for and reasonableness of the other portions of the proposed rules by an affirmative presentation of facts in the record.

²²² Ex. C, 1309.0905 R905.2.1.

²²³ Department letter, February 23, 2007, p. 7.

5. The additions and amendments to the proposed rules suggested by the Department after publication of the proposed rules in the State Register are not substantially different from the proposed rules as published in the State Register within the meaning of Minn. Stat. § 14.05, subd. 2, and 14.15, subd. 3.

6. Any Findings that might properly be termed Conclusions and any Conclusions that might properly be termed Findings are adopted as such.

7. A Finding or Conclusion of need and reasonableness in regard to any particular rule subsection does not preclude and should not discourage the Board from further modification of the proposed rules based upon an examination of the public comments, provided that the rule finally adopted is based upon facts as appearing in this rule hearing record.

Based on the Conclusions, the Administrative Law Judge makes the following:

RECOMMENDATION

IT IS RECOMMENDED that the proposed rules be adopted, as described in this Report.

Dated this 23rd day of March, 2007.

/s/ Richard C. Luis
RICHARD C. LUIS
Administrative Law Judge

Transcribed: Kirby A. Kennedy & Associates.
Angela D. Sauro, Court Reporter